

## Astrophysics &gt; Cosmology and Extragalactic Astrophysics

# Accurate AGN black hole masses and the scatter in the $M_{\text{bh}}$ - $L_{\text{bulge}}$ relationship

C. Martin Gaskell

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A new empirical formulae is given for estimating the masses of black holes in AGNs from the H beta velocity dispersion and the continuum luminosity at 5100 Angstroms. It is calibrated to reverberation-mapping and stellar-dynamical estimates of black hole masses. The resulting mass estimates are as accurate as reverberation-mapping and stellar-dynamical estimates. The new mass estimates show that there is very little scatter in the  $M_{\text{bh}}$  -  $L_{\text{bulge}}$  relationship for high-luminosity galaxies, and that the scatter increases substantially in lower-mass galaxies.

Comments: In press in "Co-Evolution of Central Black Holes and Galaxies", IAU Symposium Proceedings No. 267, eds. B. M. Peterson, R. S. Somerville, & T. Storchi-Bergmann. Cambridge University Press, 2010.  
1 figure

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